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THE VETERINARY JOURNAL

A MONTHLY REVIEW OF VETERINARY SCIENCE

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The Veterinary Journal.

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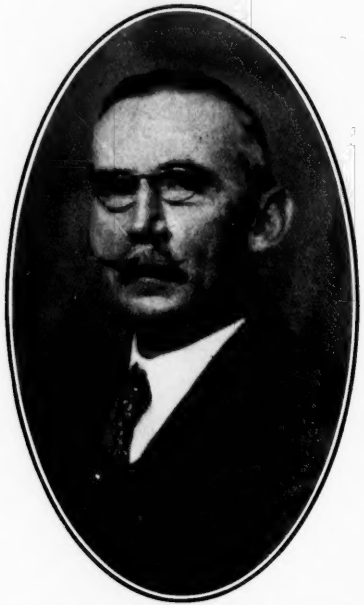

Vice Principal and Professor of Medicine

Professor GEORGE H. WOOLDRIDGE, F.R.C.V.S., M.R.I.A.

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OCTOBER, 1936

THE CHIEFS OF STAFF OF THE ROYAL VETERINARY COLLEGE.

OUR frontispiece will give the readers of the Journal at home and abroad, and indeed all the members of the profession, an idea of the arrangements made by the Board of Governors for the direction of the academic and general management of the London College from now onwards until the official opening of the new buildings takes place next year.

By the time that this historic and epoch-making event occurs it is hoped by everybody (including the staff, students, and even old graduates and members of the general public) that the new Charter—which makes it compulsory for a reasonable proportion of veterinary surgeons to be on the Governing Council—will have received the sanction of the Privy Council. For many years the curious anomaly has existed that there has been only one veterinary surgeon amongst its active members, and it will be remembered that this gentleman recently resigned. The Governors' control is therefore now entirely in the hands of laymen—truly an extraordinary state of affairs!

Sir Frederick Hobday is Principal and Dean, and Professor of Surgery, until the Opening Day—but on leave of absence from all active part in College affairs. The work which he carried out during the past nine years has been divided between three professors. Professor Buxton, who has taken over a part of his duties with the title of Acting Principal and Dean, but with no lectureship Chair; Professor Wooldridge, who has for many years occupied the Chair of Medicine and has taken a share of the clinical side, is appointed Vice-Principal; and the Surgical Department is strengthened by the addition of Mr. Formston as a Surgical Assistant to co-operate with the present Senior Surgical Assistant, Mr. John Wright, until the Professorship of Surgery becomes vacant by the complete retirement of the present holder of the Chair, Sir Frederick Hobday; when he will assume this responsibility and become Professor of Surgery.

Surgeon to His Majesty The King.

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THE MANSION HOUSE MEETING.

THE recent meeting which was held at the Mansion House by the kind permission of the Rt. Hon. the Lord Mayor of London (Alderman Sir Percy Vincent, Bart.), on October 19th, was originally granted at the personal request of Sir Frederick Hobday, the Principal, and a journalist friend and well-wisher of the College (Mr. Toye Vise), as a further means of adding to the Royal Veterinary College Rebuilding and Endowment Funds. It was a fitting and very substantial prospective climax to their joint efforts in this direction through a very well organised and successful appeal in which the owners of all the old war horses, which were paraded at the First International Horse Show at Olympia, had already, by their kind efforts in various parts of the country, gathered in several hundred pounds by means of collecting bags of horses' nosebag shape. Although this original object was not completely lost sight of, the Principals of two of the other Colleges had been invited to attend and speak upon the subject of their own respective Colleges' needs. Representatives of the Council of the Royal College of Veterinary Surgeons and of the National Veterinary Association, and others, came prepared to take up the subject of the financial position of veterinary education generally, but they were not called upon; which was unfortunate, as the audience contained a number of well-known veterinarians who had an accurate and practical view of the subject and had come from long distances prepared to speak.

However, an Appeal which has its origin in the Mansion House and the good wishes of London's First Citizen behind it cannot but bear good fruit *if only launched in the right way*; and the College authorities will know that they have behind them the good wishes not only of every graduate who claims the London College as his *Alma Mater*, but of the whole body of the profession who have, during the last nine years, watched the gradual demolition of the rightly-named "National Disgrace," and the rise of the new Phœnix from its ashes.

INADEQUATE SUPPORT OF VETERINARY RESEARCH.

FOR years the members of the veterinary profession have felt the need of adequate Government support, and this has not been confined to the research side only; but now that the latter has been prominently brought forward by speakers at the recent Mansion House Meeting, it is a good opportunity for our readers to consider how far the remarks are accurate from the veterinary standpoint; and in what way matters can be adjusted to bring together for the benefit of animal husbandry those who hold the purse-strings and those who have the brains.

Those in authority in the teaching colleges regret every final examination to see brilliant young men, endowed with that great patience and scientific skill which is the foundation of the research worker, pass through the portals and drift into one of the Services, or else into general practice; solely because of the miserable and utterly inadequate remuneration offered to the research workers—not only miserably insufficient as a living wage at the commencement, and for, perhaps, two (or even three or four) years—but with no definite opportunity for advancement.

"The labourer is worthy of his hire," and there is no branch of the veterinary profession to which this does not apply—and sweated labour never begets good work in any sphere of life.

A two-hundred-a-year scholarship—after an education which has cost a man some £1,200—is not adequate encouragement to give a willing worker, and to the man who has to make it a sufficiency to exist upon until such time in which a salaried post comes along, it is impossible and intolerable. At this period of his career it should be £300, which would then compare more satisfactorily with other branches.

General Articles

THE FINANCIAL POSITION OF VETERINARY EDUCATION.

Meeting at the Mansion House.

By kind permission of the Rt. Hon. The Lord Mayor of London (Alderman Sir Percy Vincent, Bart.) the Mansion House was placed at the disposal of the Governors of the Royal Veterinary College in order that a further appeal might be made on behalf of that Institution for funds to complete the rebuilding and endowment; and advantage was also taken of the occasion to draw attention to the pressing need for monetary aid for veterinary research and education generally. The meeting was held on October 19th, and owing to the unavoidable absence of H.R.H. The Duke of Gloucester (the President of the College) the Chair was taken by the Rt. Hon. The Lord Mayor.

The Lord Mayor (Sir Percy Vincent) opened the proceedings by reading a letter from H.R.H. The Duke of Gloucester, in which he regretted he was unable to attend the meeting. After welcoming the Minister of Agriculture and Fisheries and the many distinguished guests, he went on to say, the fact that had influenced him most when calling the meeting had been how dependent the populations of the great cities were upon the prosperity of agriculture. The produce of our own flocks and herds was far and away the most important part of our home production. There were diseases of several kinds running riot, and the wastage was uneconomical from a national point of view. One thing that could help solve the problem was a highly efficient veterinary service, with ample opportunity for research.

Mr. Elliot, the Minister of Agriculture and Fisheries, said that the progress of reconstruction of the Royal Veterinary College had reached a very critical point. The main buildings were nearly complete, and the Government had paid £150,000 towards this. It now remained for the College to raise another £25,000. The annual Exchequer grant had risen from £3,300 to £7,500 to assist the Governors; but whatever the Treasury provided, there was still a gap, and assistance was needed from outside sources. *If it were left entirely to Treasury funds then it would be entirely under Treasury control, which was not desirable. What was necessary was to have that independence under which scientific work can prosper.* The cost of veterinary services was a very small premium against widespread disease. The fact that we were a very healthy country was due to the work of this and other institutions. If we were to press on with the work it was necessary for people to be educated up to the needs of the times. Mr. Elliot then spoke of the great strides that had been made in eradicating disease among livestock. He said that as recently as 1923/4 there were 3,369 outbreaks of foot-and-mouth

disease in fifty-two counties, at a cost to the Treasury of £3,600,000. The average annual cost in the past five years was nearly £100,000, but in the current year to date, the expenditure was only £4,000. That showed what cash dividends could be paid by an efficient veterinary service. Rabies among dogs, very prevalent in the nineties, had been stamped out. But there were many diseases with which agriculture was still affected. There were many diseases among poultry which involved serious losses for small people. Also there were diseases among cattle. Our forefathers rooted out disease, and we should consolidate this effort. "Why should not the State foot the whole bill?" he said. *Because it would bound to be a deadening hand if the State were the only support.* Support should come from local bodies, companies and individuals also. An efficient veterinary service would pay in the maintenance of sound and healthy stock, on the success of which many human beings depended.

Sir Merrik Burrell, Chairman of the Royal Veterinary College, said that he had watched the veterinary profession hanging behind those of the other sciences, and it was of the deepest significance that he found himself addressing an assembly of such importance. This would not have been possible only a few years ago. Whilst the Government up to the last few years had been apathetic as to the welfare of the veterinary profession, this had not been the case with the Royal Family, who had always taken an interest therein. Sir Merrik went on to say that the problem of veterinary education was a national one. It should be realised that a sound veterinary education and its results affected not only England and Wales, but Scotland as well; in fact rather more so, as Scotland was training more students than England and Wales. For a good many years efforts had been made to get the building of the Colleges on a modern standing, and now the problem to face and solve was how they were to be adequately staffed and maintained. He said that they had to attract the right kind of students to their Colleges, and they must raise the education to the University standard. They would have to pay their Lecturers and Readers adequately. When all this had been done they would attract the right class of student, and the social standing of the profession would go up. He then spoke of the Agricultural Research Council and the anxiety as to the future of research in this country. How were the many problems to be solved? The money was there and the institutes were there, only they could not find the men to do the work. Scholarships were not taken up, and young men were not coming into the research world as they had hoped. This was a serious aspect which could only be solved by attracting the right men to the profession and then teach them in the right way. *The drawback was that the financial remuneration was not as attractive as that of municipal authorities, and they would have to be raised to compete with these local bodies.* Sir Merrik then went on to outline the responsibility of County Councils with regard to animal diseases. He said that it had been found during the last few years that to get efficiency and economy it was necessary to have a whole-time staff attached to County Councils. Out of 65 County Councils,

there were 35 County Veterinary Officers, and 65 assistants. He had estimated that for routine inspection alone there was needed 61 Chief Veterinary Officers, and 275 assistants. The proportion of counties with anything like an adequate staff was very small. Only 33 were doing routine inspection at all. The gross expenditure on the Milk and Dairies Act and the Tuberculosis Order was £234,000, out of which £156,000 was rate-borne. The reason why the County Councils were not carrying out their duties was because they could not find the men. As there was this shortage, and as the salaries were higher than those of the research world, the County Councils were sucking out the best young men to the grave detriment of research work. Out of the 3,500 registered veterinary surgeons, the great majority were in private practice, and recruits from the Colleges were as follows: 1930, 64; 1935, 160; 1936, only 100 were available. The number required during the past few years had been 200 a year. This was from the Colleges in London, Edinburgh, Glasgow and Dublin. In London, in the year ending March, 1936, they had had 326 students, but only a proportion of these would pass out eventually. To carry out the work outlined it was necessary to complete the building of the Royal Veterinary College, which would cost a further £40,000. The portion left over until last—the Surgical Department and Animal Hospital—was the most important. Where was the £40,000 to come from? The public had subscribed greatly. Ideas were needed on how it could be raised. When the College was fully finished and staffed it would need another £27,000 per year above its probable income to keep going. With regard to the raising of this money, Sir Merrik suggested that County Councils should follow the example of Scotland and make voluntary grants. He felt the money should come from other sources besides Government grants. He had had many critical things to say of the veterinary profession, but now he was being far from critical. In fact he had nothing but admiration for the way in which they had trained the profession, and had produced a leaven of extremely able scientists, who were able to hold their own with the rest of the scientific world.

The Mayor of Fulham said that he could only conclude from the speeches that he would be asked in due course to assist the launching of an appeal. In other words a purely educational matter would be left to charity. He could not see where, if the Government gave all the support, the deadening hand would be. This was not his own experience in other State-controlled services. It would be difficult for him to launch such an appeal in his borough. The question was a national one.

Professor J. T. Share-Jones, Director of Veterinary Studies, Liverpool University, said that the greatest need of veterinary education was that the science itself should be established on a permanent basis, in the usual way, by the establishment of Chairs in various subjects of the science, and develop around the Chairs departments. The equipment would come and the general staff would come. In Liverpool they had successfully established two such Chairs by private donations. There was a need for three other Chairs. His second point related to

hospitals. They had a small hospital established by private donation, but it could not meet the demands. There was an honorary staff. An extension was needed for accommodation of animals and to retain interesting cases. There was also a need for teaching accommodation, as they had been obliged in the past to refuse eligible candidates. They had been compelled to refuse admission to 52 per cent. of those desirous of taking the course. The Lord Mayor then rose to call Professor Share-Jones to order, as the meeting had been called primarily to consider the financial position of the Royal Veterinary College. Professor Share-Jones apologised, as he was under the impression the meeting was to discuss the question of National Veterinary Education.

Professor O. Charnock Bradley, Principal of the Royal (Dick) Veterinary College, Edinburgh, said that he had come to the meeting confused, and he was now still more confused, and he was grateful to Sir Merrik Burrell for having said that the meeting was a national concern. He could only assume the Lord Mayor was under a misapprehension.

The Lord Mayor then rose and apologised to Professor Share-Jones, stating that he was under a misapprehension as to the scope of the Conference.

Professor Bradley then went on to say that he could outline the difficulties regarding veterinary education in one part of the kingdom at all events. One of the schools now had to deal with nearly 400 students, and was seeking to extend its premises, which would cost just as much as the Camden Town School, namely, £40,000. The school would also require a maintenance grant. He was therefore delighted to think that the problem was now accepted as being a national one, and he was grateful to Sir Merrik Burrell for putting the matter on its proper basis.

Mr. Dorman Smith, of the National Farmers' Union, said that the farmers always endeavoured to keep out of the clutches of the Government, and he would try and rouse their own people to donate, and raise money, to keep out of Government control. They would do everything they could in this effort.

Sir Archibald Weigall proposed a vote of thanks to the Lord Mayor for allowing the meeting to take place in the Mansion House, and to the Minister of Agriculture for his presence and support, which was carried unanimously.

The meeting ended by the Lord Mayor returning thanks, and wishing the veterinary colleges, not only in London, but throughout the whole country, every possible success.

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MEMORANDUM ON THE REORGANISATION AND FINANCES OF THE ROYAL VETERINARY COLLEGE, OCTOBER, 1936.*

(1) The Situation in 1928.

In 1928, a Departmental Committee was appointed by the Minister of Agriculture and Fisheries to consider and report on the reconstruction of the Royal Veterinary College and its probable cost. The Committee's findings are, therefore, the most convenient starting-point from which to trace the progress which has been made since that date.

The Committee found the College in a state of dilapidation and its work being carried on under conditions which were described as " a national disgrace." As regards finances, its prospective income was insufficient to cover essential expenditure, its reserves depleted, and its staff underpaid. The Committee's recommendations, which were published in full in its report, dated August 8th, 1929, fall under the following main heads :

(1) That the College should be rebuilt on the Camden Town site, the freehold of the site being, if possible, acquired from the Ecclesiastical Commissioners. (2) That the College should, when conditions permitted, secure recognition as a school of the University of London. This, it was noted, necessitated amongst other conditions that the College should be on a sound financial basis, and that its teaching staff should be paid at University standards. (3) That the College should be reorganised internally into nine teaching departments, staffed in a manner adequate to provide proper training to meet the needs of veterinary science in this country and allow of generous facilities for research. Thus in addition the College would be enabled to meet any likely demands for post-graduate courses in this country and the needs of the Colonial Empire. (4) That the Government of the College should be reconstituted under a new Charter. (5) That more effective co-operation should be established between the College and the Research Institute, and that the Ministry's Grant to the latter should be increased and that it should be provided with a field station.

The cost of rebuilding, including the purchase of the freehold and of equipment was approximately estimated at £300,000. The extra cost of staffing, maintenance and research work in the new departments was estimated tentatively at £25,500 per annum. In summing up its conclusions, the Committee stated :

" We realise that these are relatively large figures, but we have before us three main considerations. First, the Royal Veterinary College, which is the oldest and most widely-known institution for veterinary education and research in the Empire, has been carrying out its work under conditions which are discreditable to a civilised community, and is now in imminent danger of closing down for lack of funds. We cannot think it right that there should be such an end to the

* Printed by order of the General Purposes Committee of the Board of Governors, for distribution at the Mansion House Meeting, held by the kind permission of the Lord Mayor of London, October 19th.

labours of nearly a century and a-half—labours, moreover, of which the continuance is imperatively demanded by the national interest. Secondly, it is useless to contemplate half measures ; if the reconstruction of the College is to be undertaken at all, it must be undertaken thoroughly. Thirdly, in its main outlines such a reconstruction must be designed to meet the requirements not of a few years, but of the next half century ; it is neither right nor possible to expect that the effort now required can be soon repeated."

This Report was accepted in principle by the Government of the day

(2) Development since 1928.

It will be convenient to trace the subsequent developments separately under the main heads of the Committee's recommendations as set forth above.

(1) *Rebuilding.*—In 1930 the representations of the Ministry of Agriculture and Fisheries resulted in an offer being made by H.M. Government to provide £150,000 for the rebuilding of the College if a further £100,000 could be found by the Governors from other sources. Although at first the prospects of raising such a sum appeared remote in the extreme, it has, largely through the untiring efforts of the Principal, Sir Frederick Hobday, been successfully accomplished. The site, including the area to the North mentioned by the Committee, has been purchased from the Ecclesiastical Commissioners at a cost of £23,000. The old College has been completely demolished. The outlying portions of the new College, consisting of the Canine and Animal Husbandry Blocks, the Pathological Museum Wing connecting the Research Institute with the new Main Block, the Reception Block, Ride and Post-Mortem Block have now been completed. In addition, financed mostly by a legacy of £18,500 from the estate of the late Mrs. Grove-Grady, the modern Beaumont Animals' Hospital has been built for the treatment of the animals of the poor.

The Main College Block is now in course of completion. All these works have been carried out on the plans of Major H. P. G. Maule, the Architect, who was asked to prepare them by the Departmental Committee.

The total cost of the land and of these buildings will be approximately £277,000, of which £179,000 has been paid to date, £96,500 by the Governors and £82,500 by the Ministry from their grant of £150,000. The balance to be paid amounts to £98,000, for which purpose the Ministry has £67,500, being the balance of its grant, while the Governors have in their Building Fund a sum of £22,500, making £90,000 available in all.

To complete the full programme as outlined by the Committee a further £40,000 will be required to utilise the northern area above-mentioned for the proposed surgical and large animals' accommodation.

(2) *London University.*—Power has been taken in the new Charter to seek admission as a School or Faculty of the University. The salaries of the staff, in so far as these have been appointed, have been brought up to the usual level of University teachers. An Academic Board has been established. The new

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buildings allow for the installation of proper equipment and facilities for research. The provision of an adequate annual revenue is the only matter yet to be settled.

(3) *Internal Organisation.*—As the result of further discussions on the organisation and staffing of the various Departments, it was agreed at a meeting between the Governors of the College and the Agricultural Research Council in 1933 that the teaching work of the College could be organised more efficiently under six large departments than under the nine smaller ones originally proposed by the Committee. The staff necessary to work these six departments was decided upon at the same time, and the Governors have, as far as funds permit, been working within the framework so set up. Appendix I shows the full staff as agreed by the Agricultural Research Council together with such parts of it as it has so far been possible to appoint.

(4) *New Charter.*—A new Charter of Incorporation, based on the recommendations of the Committee, was drafted and finally adopted by the Governors of the College in March, 1936. This Charter is now before the Privy Council and is expected to come into effect in the month of November.

(5) *Research Institute.*—More effective co-operation has been established between the Research Institute and the College by combining the work of the Department of Pathology with the work of the Institute. The staff of the Institute are also the staff of the Pathological Department, the cost of their salaries being shared between the two Institutions. Up to date the maintenance grant of the Institute has not been increased beyond the £5,000 previously paid, nor has a field station been provided.

(6) *Finances in the Period* 1929–1936.—(*a*) *Capital Account.*—At the commencement of the financial year 1928–1929 the College showed a deficit on the previous year's working of £4,151, and an overdraft at the College Bankers of £2,199. Its reserves in cash and investments amounted to £10,000. Of these investments, stocks to the value of £7,400 were sold during the year to wipe off this deficit and overdraft. Since that date, with the exception of the years 1932–1933 and 1933–1934, there has been an annual deficit. The Governors have however, managed to avoid the College actually falling into debt partly by the assistance of special donations and partly by using a separate account for pathological fees as a sort of reserve account to cover any serious deficit. The Ministry of Agriculture, moreover, increased their grant of £3,300 to £5,000 in 1932, £6,250 in 1935, and £7,250 in 1936. In addition to the £7,400 withdrawn from reserve account, as mentioned in 1929, £1,600 was withdrawn in 1930 and £1,000 in 1932. In the academic year 1934–1935 it was again estimated that, allowing for a grant of £7,000 from the Ministry, there would still be a deficit of £3,000 on the year's working. The Governors undertook again to draw upon their reserve funds for this sum. They have had to do so yet again in the year 1935–1936 to the extent of £1,990. In order to effect this last withdrawal the total remaining reserves of the College had to be thrown into the General Account. The only investments still held, valued at £1,377, have, by the provisions of the

INCOME AND EXPENDITURE FOR FINANCIAL YEARS ENDING MARCH 31st.

	1928	1929	1930	1931	1932	1933	1934	1935	1936
INCOME.	£	£	£	£	£	£	£	£	£
Infirmary Department	2,528	3,111	4,015	3,943	3,801	3,564	3,330	3,893	4,627
Other Departments. Fees and Charges	299	264	244	215	440	52	495	663	2,566
Subscriptions...	1,847	1,895	2,150	2,287	2,335	2,415	2,501	2,546	3,025
Donations	2	6	2	2	2	—	150	1,296	600
Special Donations for Salaries and Wages ...	—	1,109	951	1,633	1,732	1,976	1,603	—	—
Pupils' Fees	3,123	3,711	4,729	5,226	5,820	7,071	8,075	8,559	8,363
R.A.S.E. and other Grants	400	400	400	400	400	400	400	400	450
*Endowments	—	—	—	—	—	—	—	—	1,600
Miscellaneous...	305	254	129	116	177	117	86	70	87
TOTAL ...	8,504	10,750	12,620	13,822	14,707	15,595	16,640	17,427	21,318
Government Grant	3,300	3,300	3,300	3,300	5,150	5,000	5,000	5,000	6,250
	£11,804	14,050	15,920	17,122	19,857	20,595	21,640	22,427	27,568
EXPENDITURE.									
Infirmary Department	2,435	2,847	3,209	3,191	2,989	3,046	3,027	3,459	3,606
Professional Salaries...	6,722	8,421	7,741	8,385	10,133	10,401	10,685	12,344	14,820
Superannuation	447	492	443	387	589	676	698	869	1,128
Wages...	913	1,049	1,008	1,075	1,630	1,616	1,775	2,135	2,537
Rent	750	750	750	750	819	375	—	—	—
Rates, Taxes, Insurance	1,180	1,040	998	927	932	1,007	826	2,288	1,702
Heating, Light and General Maintenance... ...	3,508	3,258	2,465	2,890	2,878	2,652	3,420	4,466	5,765
TOTAL ...	£15,955	17,857	16,614	17,605	19,970	19,773	20,431	25,561	29,558
DEFICIT ...	£4,151	3,807	694	483	113	—	—	3,134	1,990
SURPLUS ...	—	—	—	—	—	822	1,209	—	—

* The incomes from the Courtauld Endowment of the Chair of Animal Husbandry (£25,000) and the Tailwaggers' Fund (£20,000) raised by the support of Mr. Stephen Lethbridge and the Directors of Messrs. Spratt, Ltd., for the Chair of Canine Medicine and Surgery, are not included in this column—(EDITOR *Vet. Jnl.*).

College Charter, to be held against Life Subscriptions. The College has, accordingly, no further reserves upon which to draw.

(*b*) *Income and Expenditure.*—The Table on page 354 shows an analysis of the Income and Expenditure of the College for the period 1928–1936.

(3) Present and Future Needs.

(1) It will be evident from the above brief recapitulation that the Governors have now done as much towards carrying out the recommendations of the Departmental Committee as can be done until the necessary extra financial provision is made for the maintenance and staffing of the new College.

(2) Part of these extra costs will fall inevitably on the College as soon as the new buildings are taken into use, and part consists of the salaries and superannuation of the new appointments required to bring the staff up to the full strength agreed upon with the Agricultural Research Council, together with the wages of the laboratory assistants who will need to be attached to them. The following Table shows :

(A) The approximate annual expenditure of the College on its present standard of working (but making no allowance for abnormal additions caused in 1936–1937 by the overlap in the office of Principal).

(B) The additional expenditure involved immediately on taking over the new Main College Block.

(C) The additional expenditure required to complete the staff and their lay assistants.

	A.	B.	C.	Notes.
	£	£	£	
Infirmary and Forge Departments	3,600			
Other Departments :				
Surgery }	included in			
Medicine }	Infirmary			
Animal Husbandry	100			
,, E.P.D.S.	370			
Physiology and Chemistry ...	250	1,500	3,000	Research Funds
Anatomy and Biology	200			
Pathology	540			
,, Vaccines	550			
Radiology	100			
Salaries	16,240		7,700 (average)	Appendix I
Superannuation	1,550		680	
Wages	2,900	2,500	960	,, II and III
Rates, Taxes, Insurance	1,700	2,420		,, II
Light, Heat, Water	1,330	750		,, II
Cleaning Materials and Incidentals	930	300		,, II
Repairs and Painting	270		400	
Printing	110			
Stationery	240			
Advertising...	60			
Telephones...	250			
Library Expenses	100	400		,, II
Students' Prizes	30			
Grants to Students' Society ...	20			
Audit Fee	60			
Total ...	£31,500	£7,870	£12,740	

Total when buildings taken over, £39,370 Grand Total when staff completed, £52,100

Details of the various increases are shown in the appendices indicated in the Table. The only point not so treated concerns the £1,500 and £3,000 shown for research in Columns B and C respectively. These items are taken direct from the recommendations of the Departmental Committee of 1928, who laid down that £500 should be provided for this purpose for each of the nine departments. As the six large departments will cover the same ground as the original nine, the sum of £4,500 has been retained. Further, in order properly to employ the new buildings which were designed largely for this purpose, some research will, it is hoped, be commenced at once by the existing staff ; the greatest part of it, however, will follow on time being made available for the work by the completion of the staff cadre. These considerations are reflected in the allocation of £1,500 to Column B and the remainder to Column C.

It appears impossible to show in detail at what rate in the next five years the extra expenditure of the College will rise from the scale of Column B to that of Column C. This depends entirely on what new staff is appointed in any given year, and it has been the policy of the Governors to await the appearance of the really suitable candidate before filling any new post. Owing to the limited size of the veterinary profession the supply of first-class men is very small and opportunity must be taken to secure them as and when they become available. For this reason no detailed estimate of the rise in expenditure to the Column C scale can be given as regards any individual year between 1937 and 1942. All that can be said is that it is anticipated that within this period the total scale of Column C, namely £52,000, will be reached.

(3) To meet this estimated annual working cost of £52,000, the College last year showed a revenue of its own of £21,300. As may be seen from the statistics of revenue since 1929 given above, this figure is the highest ever reached by the College. A direct comparison is, however, somewhat misleading, inasmuch as in the older accounts the revenue from the reserve funds mentioned above was not included. Allowing for these the revenue for the year 1934–1935 would be about £19,000.

The recent increase is attributable mainly to the departmental services rendered by the College in the Infirmary Department and in those of Pathology, Chemistry and Preventive Medicine.

It is of importance to consider to what extent the various sources of revenue may be expected to increase or decrease within the next five years. As regards the Infirmary Department, the Governors are of opinion that, in view of the intense publicity given in recent years to this side of the work of the College, it is probable that the number of patients likely to be attracted has now reached a maximum. Even if this should not prove to be the case, the great increase in numbers is beginning seriously to interfere with the teaching work of the staff, and thus defeat the purpose for which, to a large extent, the clinic exists. The point will have to be considered whether means cannot be devised, possibly by

an increased rate of subscription, to maintain the revenue from this department while lessening the work entailed in earning it.

As regards the other revenue-earning departments, there is reason to believe that their activity will continue to increase. If the preparation of synthetic tuberculin is transplanted from Cambridge, as the Acting Principal proposes to do, an increased revenue of at least £1,000 per annum should follow. It will be safe, therefore, to allow for at least £1,000 increase in these departments.

The other sources of income, except for donations, which are an uncertain quantity, and pupils' fees, are not susceptible of expansion. As regards the latter, the present Governors recently decided that in view of the increased facilities offered for training, the heavy demand for entry, and the low scale of fees obtaining as compared with the medical and other University scientific courses, it would be feasible and proper to raise the fees in 1937. The actual decision on this point was, however, left to the new Council when it comes into being. But it seems to be generally admitted that the present scale, which totals approximately £30 for each year of the course, might easily be raised to £40. It would not, however, be possible to do this except in the case of new entrants, so that the total increase will be spread over the next five years. On a student body of 300, this total would eventually amount to £3,000.

Apart, therefore, from the possibility of obtaining further endowments from private benefactors or additional annual grants from scientific bodies or Trusts (and the Governors have no promise of either), it would appear that an additional income of £4,000 per annum by 1942 may fairly be anticipated. This, however, as mentioned above, will come by stages.

(4) Taking, therefore, £21,000 as the probable revenue for the academic year 1936–1937, the following would appear to be a fair forecast for the five following years :

Academic Year	1937–8	1938–9	1939–40	1940–1	1941–2
	£22,000	£23,200	£23,800	£24,400	£25,000

(5) The academic year 1936–1937 is an exceptional one, partly owing to the overlap of Principals, necessitated by circumstances of which the Ministry are aware, and partly because the new buildings will probably be occupied during the last quarter of it only. The additional expenditure over the Scale A standard will, accordingly, be approximately :

Overlap of Principal and repercussions in Departments of Surgery and Medicine	£1,020
One quarter of New Building " overheads," say	1,480
	£2,500

(6) The Governors accordingly will need from some source or other the following sums for maintenance in the next five years :

	Amount required
Academic Year 1936–1937.	
Expenditure £34,000, *less* income £21,000	£13,000
Academic Year 1937–1938.	
Expenditure (Scale B) £39,370, *less* income £22,000	£17,370
Allow provisionally for half of Scale C, say	6,000
	£23,370
Academic Year 1938–1939.	
Expenditure (Scale B) £39,370, *less* income £23,200	£16,170
Allow provisionally for whole of Scale C	12,740
	£28,910
Academic Year 1939–1940.	
Expenditure (B and C) £52,110, *less* income £23,800	£28,310
Academic Year 1940–1941.	
Expenditure £52,110, *less* income £24,400	£27,710
Academic Year 1941–1942.	
Expenditure £52,110, *less* income £25,000	£27,110

As mentioned above, the rate at which Scale C may operate cannot be exactly foretold; the above figures allow for the staff being completed in the years 1937–1938 and 1938–1939.

APPENDIX I.

Full Staff as agreed with Agricultural Research Council.

Principal and Dean, originally a Professor, at an extra	£200	to be	£1,600
Department 1.—Surgery and Obstetrics.			
1 Professor...	£1,000		
1 Reader, Surgery... ... ...average	650		
1 Reader, Obstetrics ... ... ,,	650		
2 Lecturers... ... ... ,,	1,000		
			£3,300
Department 2.—Medicine, Materia Medica and Therapeutics.			
1 Professor...	£1,000		
1 Reader, Preventive Medicine ... ...average	650		
1 Reader, General Medicine ... ... ,,	650		
3 Lecturers ... ... ,,	1,500		
			£3,800
Department 3. Animal Husbandry.			
1 Professor...	£1,000		
1 Reader ... ...average	650		
1 Lecturer ... ... ,,	500		
			£2,150
Department 4. Physiology and Chemistry.			
1 Professor (Physiology)	£1,000		
1 Reader (Biochemistry) ... ...average	650		
1 Reader (Pharmacology) ... ... ,,	650		
1 Lecturer (Chemistry) ... ... ,,	500		
3 Demonstrators ... ... ,,	900		
			£3,700

Department 5.—Anatomy, Histology, Biology and Embryology.		
1 Professor...	£1,000	
1 Reader (Histology) ... ...average	650	
1 Lecturer (Biology) ... ... ,,	500	
2 Demonstrators ... ... ,,	600	
		£2,750
Department 6.—Pathology. (Half Salaries)		
1 Professor	£600	
Division of Pathology.		
1 Reader ... ...average	£400	
1 Lecturer ... ... ,,	275	
1 Demonstrator (full salary)	300	
Division of Bacteriology.		
1 Reader (Bact.) ... ...average	£400	
1 Reader (Biochem.) ... ... ,,	400	
1 Lecturer ... ... ,,	275	
1 Demonstrator ... ... ,,	150	
Division of Parasitology.		
1 Reader ... ...average	£400	
1 Lecturer ... ... ,,	275	
1 Demonstrator ... ... ,,	150	
		3,625
		£20,925
Superannuated Administrative Staff. (Proposed Cadre.)		
1 Secretary ... ...average	£800	
1 Librarian... ... ... ,,	300	
1 Cashier or Accountant ... ... ,,	300	
		£1,400
Non-Superannuated Staff.		
1 Engineer ... ...average	£234	
1 Book-keeper ... ... ,,	150	
2 Ledger clerks ... ... ,,	260	
2 Typists (Secretaries) ... ... ,,	300	
6 Departmental Typists ... ... ,,	624	
Practical Instruction in Meat Inspection	30	
Pensions	20	
		1,618
Total Average ...		£23,943

Rising to a possible maximum of £27,240.

[Here follows "Appendix I—Staff on 1936–37 Basis," in which each individual member of the present staff is mentioned by name, together with the amount of his annual salary.]

APPENDIX II.

Charges which will fall on the College as soon as the new buildings are taken into use:

(1) RATES, TAXES AND INSURANCE.

(1) Rates.

Calculated on the comparative value of the new buildings compared with the other modern and similar buildings at present in use, it is likely that the new buildings will be rated at a value of about £4,200 for the half-year, *i.e.*, an additional rate at 5*s.* per half year of £2,100

(2) TAXES.
It seems probable that the College will have to pay Income Tax Schedule A on the Principal's and Caretaker's flats. There are worth probably £500 annual rental value, making a tax charge at 4*s*. 9*d*. of £119

(3) INSURANCE.
(*a*) The new buildings and their new contents will be worth probably £175,000. Extra Fire Insurance at 1*s*. 6*d*. per cent. will therefore cost ... 131
(*b*) 3 Lifts, Boilers, etc., will cost probably 70

Therefore the increase under the heading Rates, Taxes and Insurance is likely to be £2,420

(2) LIGHT, HEAT AND WATER.

The cost of electricity for lighting and power is estimated by Messrs. Tyler and Freeman, the electricians, at £400
The contract with the Gas, Light & Coke Co. for the heating of the new building is for 400
On a comparative basis the additional water-rate may amount to 150

£950

From this figure there may be deducted the expenditure on these services on the present temporary offices, library and common room, amounting to £200

Which leaves the additional cost at £750

(3) WAGES.

These fall under two main heads, namely, laboratory staff and cleaners. The former is governed more by the size of the professional staff than by the number of laboratories, and must largely depend on the extent to which the professional staff is made up to strength. An estimate of wages on a basis of a full professional staff is given in Appendix III. But even with no extra professional staff the added number of laboratories will entail some extra assistants, and it would be safe to allow for this an extra, say £900
A fairly large force of extra cleaners will be required in any case, probable cost ... 1,300
Also a telephone operator and a handy-man assistant to the College Engineer, say 300

£2,500

(4) CLEANING MATERIALS AND INCIDENTALS.

An increase, including window-cleaning, should be allowed for of £300

(5) LIBRARY.

The existing Library has been starved for years. At least £500 a year over many years is required to bring it up to and keep it in the condition necessary for an Institution like this. Extra cost £400

APPENDIX III.

Wages (other than Infirmary).

(1) SURGERY.
No wages at present charged, as the department works with the Infirmary Staff. Will probably require one laboratory assistant and instrument man at extra cost of £150

(2) MEDICINE.
No wages at present charged. Will require a dispenser at, say, £3 per week, and the section of Preventive Medicine will take with them from the Institute five laboratory assistants. Extra cost to the department of, say ... £830

(3) ANIMAL HUSBANDRY.
Present staff: 1 laboratory assistant, 1 cowman and 1 typist, proportion of which is charged against E.P.D.S. If the number of animals kept increases, a further cattle man will be required at extra cost of £150

(4) PHYSIOLOGY AND CHEMISTRY.
Present staff: 2 laboratory assistants in physiology, and an odd man who works for Chemistry lecturer. Physiology will probably require a mechanic and glass blower. Two laboratory assistants and a boy. Chemistry will require one laboratory assistant and a boy. Extra cost £300

(5) ANATOMY.

Present staff: three laboratory assistants, a boy and a man cleaner for the dissecting room. The department will require a micro-technician and a photographer, three laboratory assistants, three juniors and a man cleaner at an extra cost of	£ 430
TOTAL to this point	£1,860

(6) PATHOLOGY.

With the present professional staff it would appear that this department can carry on with what it has at present, *i.e.*, Preventive Medicine staff will be economised from Pathology, with whom they are working at present. Probably an extra man and boy will be needed for the new accommodation. This will leave an economy of £700, *less*, say, £180 = £520. *Less* £520	520
TOTAL EXTRA EXPENDITURE to this point.	£1,340
If, however, the department is brought up to its full strength it looks as if staff approximately equal to the transferred Preventive Medicine staff will have to be replaced, leaving the total extra cost at	1,860
Add the wages of non-laboratory staff entailed by the new buildings... ...	1,600
	£3,460
Rising to a maximum total of	£3,851

ROYAL VETERINARY COLLEGE, LONDON—1791–1936.

By Lt.-Colonel SIR MERRIK R. BURRELL, Bart., C.B.E.

Chairman of the Governors.

THE financial position of veterinary education as affecting the Royal Veterinary College, London, is briefly as follows: (*a*) The College is in need of a further £40,000 to complete the rebuilding scheme; (*b*) the College is in need of a greatly increased income to meet its annual working costs. The following short note will make the position clear:

For many years the training of veterinary surgeons had occupied the position of the Cinderella in the world of higher education. The College had struggled on, with insufficient finances, ruinous buildings, and a staff inadequate and miserably underpaid. This deplorable state of affairs was brought to the attention of H.M. Government soon after the Great War, but continual representations led to little result. Public attention was first drawn to the matter in 1927 by the Colonial Office, who were alarmed at the inadequate facilities existing for training veterinary surgeons to deal with the important problems of animal health in the Colonies. A Departmental Committee, appointed by the Ministry of Agriculture and Fisheries, followed in 1928, to report on the reconstruction of the Royal Veterinary College. This Committee made recommendations for the complete rebuilding of the College on the site in Camden Town which it had occupied since 1791; for the reorganisation and re-staffing of its departments in a manner suited to the urgent needs of veterinary science in this country and

to the demands of the Empire ; for the revision of its form of government by means of a new Royal charter, and for other relevant matters. The cost of rebuilding, including purchase of the site, was estimated at £300,000 and the extra maintenance charge at, tentatively, £25,000 per annum.

These recommendations were accepted in principle by H.M. Government, and the Governors of the College have been working towards them, as and when funds were available, ever since that date.

In 1930, by which time the position of the College had become desperate, an offer was made by the Government to provide £150,000 towards the cost of rebuilding, if the Governors could themselves raise £100,000. Through the untiring efforts of the Principal of the College, Sir Frederick Hobday, and the generosity of its many friends, the sum was raised. The site of the College was purchased and the old buildings demolished. The outlying buildings of the new College have been completed and the Main Block is in course of construction. The purchase of the land and the erection of these buildings will cost £277,000. To meet this the College has raised £120,000, or £20,000 more than the £100,000 originally stipulated, while the Ministry is contributing from its grant of £150,000. There is still, accordingly, a deficit of £7,000 on the present building contract.

To complete the College, by providing the necessary Surgical and Large Animals' accommodation, a matter of very great importance, a further £30,000 is required. In addition, a large sum will be needed for equipment. The College is, therefore, now asking for £40,000.

As regard annual maintenance, the extra " overheads " on these new modern buildings, in the shape of rates and taxes and insurance, lighting, heating and cleaning and wages costs, will be heavy. It is estimated that they will amount to £6,000 a year. Further, in order to staff the College on the lines laid down in the Departmental Committee's report, and as revised by the Agricultural Research Council, and to enable it to perform the functions that are required of it both in education and veterinary research, a further £14,000 per annum will be required. Added to the present cost of the College, these additions mean that the total annual sum required for maintenance and research will be in the neighbourhood of £50,000 per annum. To meet this the College's own revenues amount to only £21,000, with possible increases to £25,000 within the next few years.

These figures appear large, but must seem moderate to anyone who reflects on the primacy of England as the breeder of thoroughbred horses and pedigree stock, the vast capital sunk in her livestock industry, its heavy losses due to diseases, and the immense importance of the subject as regards the public health of the nation ; when, too, the sums spent in other European countries and in the Union of South Africa are considered, the policy now being pursued for London, the centre of the Empire, appears as the minimum effort that is urgently demanded by modern conditions.

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THE ANATOMICAL INSTITUTE, BRNO, CZECHOSLOVAKIA.

By C. W. OTTAWAY, M.R.C.V.S.

Demonstrator of Anatomy, Royal Veterinary College, London.

THESE notes are not intended to be in detail; they are merely a brief description of the Institute, showing its constitution and pointing out any particular schemes, apparatus, technique, etc., on which its organisation and efficient running depend.

The building was commenced in 1928, but it was not finished until 1933, and from the beginning its organisation and equipment have been controlled by the capable hands of Professor Jan Kolda. This is an important point: when one can start with a new building, one has less restrictions, and a higher standard of efficiency can more readily be obtained. It consists of a basement, ground floor and first floor, the remainder of this block being devoted to Hygiene.

In the basement is the slaughter-house, demonstration room for viscera, technical work room, experimental operation theatre, wash room, kennel, modelling room, specimen store-room, and photographic room. On the ground floor are the dissection room, osteology room, museum, lecture theatre, Prosector's room, osteological demonstration room, preparation room, examination room, and locker room. On the first floor are the professor's living quarters, his private study and private work room, library, histological room, assistant's rooms, two technicians' rooms, and the upper parts of the lecture theatre and museum.

Basement.—The slaughter-house is centrally placed, and is connected directly by means of sliding door to the road. This is very convenient from the point of view of transport of animals. It is well lit, has no furniture, and the floor is paved with squares to prevent slipping. The animal is killed here, and bled, and generally cleaned by means of a hose. There is a central grating with a trap, and two accessory gratings so that the place can easily be kept clean and the drains clear. The animal is then swung into the adjoining demonstration room by means of a pulley and overhead rails. The demonstration room contains a central table on which the animal is fixed, and a gallery for students arranged in form of a quarter moon, with rails between it and the table. The students gain access to this by stairs leading from the lecture theatre on the first floor, and are not allowed on to the floor of the demonstration room. One fore limb is removed, and the hind limbs spread apart. An assistant then demonstrates the contents of the abdominal cavity merely from the point of view of showing the viscera *in situ*. The following points are worthy of note about the table: (1) It is shaped like an operation table; (2) it has a stone top which slopes towards a central grating; (3) it has four wooden sides about four inches high which can be removed, so that when in position they serve the purpose of keeping the viscera together, and when removed give a better view of the demonstration. After the demonstration the animal is cut into sections and taken to the dissection room

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The animal referred to above is the larger animal; the dog, etc., is dissected *in toto*.

Next door to the slaughter-house is the technical work room. The most noticeable things about this room are the good lighting, natural and artificial, and the presence of many tables, shelves and cupboards, in which instruments of all kinds are nearly arranged. The whole of the technical work of the institute is carried out in this room. It contains the following apparatus: (1) One smooth and one rough grinding stone for knives; (2) two electric drills, adjustable; (3) a carpenter's bench with a complete set of tools; (4) bellows; (5) a forge fire, with a large chimney and all necessary tools for iron work; (6) balance; (7) wash-basins, gas and electrical fittings. The majority of the apparatus is worked by electricity.

Across the vestibule is the experimental operation room in which experiments for anatomical research are carried out. As it is often necessary to keep the animal alive after the operation, the room is fitted up with all the conveniences of a modern operating theatre, and operations are performed under complete aseptic conditions. Next to this is a kennel in which the experimental animals are kept. Then comes the wash room for the lay staff. When people are dealing with cadaver it is essential to have adequate washing facilities. The model room is fitted up like a sculptor's studio, in which beautiful plaster casts from dissections are made. This is not a special anatomical work, the specimens are made in the same way as any other plaster cast. The store room for specimens contains several large watertight cement tanks set into the floor, the bottom of each tank being actually below floor level. Each has an efficient draining apparatus, can easily be washed out, and has a special closely-fitting lid which keeps out flies and dirt, etc. Finally, the photographic room contains all types of modern apparatus for developing, enlarging, etc., and has facilities for underwater photography and photomicrography. The developing portion is particularly well equipped, containing foot switches which control light and water, and a special sink fitted with an overflow apparatus, in which specimens can be left in running water overnight without any risk of a flood.

First Floor.—The dissection room is in the central position here. It is a large room capable of holding eighty students. The floor is of stone, and the walls are tiled to the height of six feet from the ground. There is no slope to the floor, but there are several gratings. These factors combined make cleaning an easy matter. Six wash-basins and eight bins are present in the room, and there are also many gas and electrical points. The north wall is entirely of glass so that good light is available all day without direct sunlight, which is bad for dissection. The ventilators are capable of changing the air five times in one hour. The dissection room is in direct communication with the slaughter-house by means of a lift, and a series of overhead rails run all round the dissection room, so that even heavy specimens can be handled with the minimum of effort. There are four large and several small wooden tables. The large ones are used for horse intestines, etc., and the smaller ones for limbs and smaller animals. The tables

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possess the following features: They are made entirely of wood. The top is painted with blackboard black so that students can use it to draw upon, and it is also of thick wood so that when it gets worn it can be planed down and repainted. They contain three drawers and two shelves for the use of the dissector for books, knives, etc. The legs have a rough rubber pad on the bottom so that they will not slip even on a wet floor. Each table has a zinc tray which can be placed on the top for any dirty dissections. There is also a small table fitted with hoof vices to remove the hoof and also to fix the leg for foot dissections.

The demonstrator's (prosector's) and workmen's rooms adjoin the dissection room, so that they are always handy for the students. The professor and other assistants have nothing to do with the ordinary routine dissection, and never demonstrate here except on special occasions. Other small points present in this room worthy of note are the use of soft soap, so that students cannot remove same; a first-aid outfit; and a lamp with a long flex to demonstrate areas otherwise hidden from light.

Next to this is the osteology room. This is simply, but nevertheless effectively, arranged. It contains one central and two wall tables, on which are arranged the bones of the domestic animals, some separate and some joined together. On either side of the main central table are the bones of the ox and horse. On one wall table are the skulls, and on the other the bones of the sheep, dog and pig. This table has a supplementary wall shelf for small animal vertebræ and mounted limbs.

All bones are fixed to the tables by fairly long chains, and the names are clearly marked on them with Indian ink. This tells the student immediately what bone he is dealing with (it is a study room, not an examination room), and prevents the student from taking the bone home for study and forgetting to return it. This room is always open for the students. The museum adjoins it, and it is built on the same plan as the dissection room. A good museum takes at least ten years to complete, and since this college is only a few years old, it is not yet finished. The specimens are at present arranged neatly on the floor awaiting the completion of the series, so that they can be arranged in order, and put in specially made cases. The specimens are of the usual kind—typical dissection specimens, organs, bronchial trees, plaster models, etc. On the other side of the osteology room is the osteological demonstration room. This is fitted up like an ordinary study and contains blackboard, charts, chairs and tables, etc. Student demonstrators give revision classes here at any time when there are sufficient students in the bone room.

The lecture theatre holds eighty-five students, the seats being arranged so that they pass upwards steeply and in a straight line; this gives every student a good view of the lecturer and the screen. The rostrum consists of a small table for notes; all specimens can be demonstrated on tables, or suspended from pulleys on overhead rails. There is a small projection room behind the lecture theatre so that pictures are thrown on to the screen from behind, the wal here

consisting of a linen screen. In one corner of the room there is a staircase for students' use leading down to the visceral demonstration room.

All examinations here are internal, and are carried out in a special examination room. This contains a table and seat at one end for the examiner, and all the necessary requirements for dissecting, writing, etc., for the candidates in the other parts of the room. The professor is the examiner, and the Government arrange for the candidates. A candidate is only allowed to sit three times. The examination consists of practical and theoretical parts. There are no fixed periods for examinations, the times being arranged to suit the professor. I do not quite know the reason for this, but I think it may be a military one. Extra-mural students are allowed to take the examination.

Between the lecture theatre and the examination room there is a small room known as the preparation room. Here all preserved and fixed specimens which may be required for use in either room are kept, so that they are always handy. Fresh specimens are, of course, obtained from time to time and brought up in the lift. The students' lockers are in the corridors adjoining the dissecting room. This floor is the only one on which the students are allowed, with the exception of the gallery in the visceral demonstration room, and is reached by the staircase from this floor already referred to. However, everything on this floor is always open, and students have free access to it, thus providing ample opportunity for study. The prevention of their intruding elsewhere is an excellent idea from the point of view of work organisation.

First Floor.—Whereas the ground floor is for students, this floor is for the use of the professor and his staff. At the end of the corridor is the professor's living quarters ; next to this is the professor's private study. The latter is fitted up like an ordinary study with desk, files, private bookcase, etc. It has also chairs and a table for visitors. Shelves containing files to show exactly what is being done, what has to be done, and what has been done in the department are kept here, together with current literature and references which are constantly required. An additional feature is an anatomical index. This consists of a complete catalogue arranged in files of all published anatomical literature, human and animal. It is a wonderful help for reference, or if you wish to study any particular work. For example, suppose one wishes to study or refer to something about the humerus : one looks up the word humerus, and so finds every book which contains work on it, including the volume and the page Next to this room is the professor's private work room. This is a miniature anatomical department in that it contains everything which might be wanted at any time. The reason being that if you are doing a particular work and you want to test anything or try an experiment, you have everything at hand, so that you can continue at once without taking your mind off the work by searching for something elsewhere. Special features of this room include a large glass box with a wooden frame, so that if you wish to leave a specimen you can put it in the box so that it will not be contaminated by anything in the room, and, alternately, it will

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not contaminate anything in the room. The other fittings include a large central table with gas, electricity and water laid on, a work bench in front of the window, a movable tray for books, instruments, a movable lamp, a blackboard, and a complete first-aid outfit. Next is the library ; this contains cases round three of the walls; the fourth wall, being entirely of glass, provides very good light. There are only anatomical books here. Every book has a number, and they are arranged in continuous series. One has merely to find the title in the catalogue, to get the number. Apart from the bookcases, the only other piece of furniture in the room is a very large table which practically fills it. Next comes a histological laboratory. This contains a complete set of histological stains and chemicals, also numbered and catalogued, and every facility for doing histological work on a small scale. The histological and anatomical departments are not connected in this college, so that any histological work required is done in this room. Across the vestibule are the rooms for the two assistants. There is nothing of particular note about these—they merely contain all the usual necessities for routine anatomical work. There is also the technician's private room. The galleries of the museum and lecture theatre open on this floor, so that the staff have a private entrance to both.

Above the Hygiene Department, right up in the roof, are the maceration and defatting apparatus—a very wise and safe place to have them. A full description of these apparatus would take too long for this report. I will merely mention a few points. The maceration tank is large, and lined inside with zinc. It can be thoroughly sealed, and has an efficient ventilator—two very important factors from the point of view of comfort. It is heated by gas, which is controlled by a thermostat. It has wire nets for the bones. The degreasing apparatus is the largest petrol oven of its kind in Europe. Roughly, it works like this : The steam is generated in a water tank in another room and passes through into the outer jacket of the oven ; as it condenses, water passes back into the water tank. In the inner jacket are the bones immersed in petrol, so that at no time is the petrol anywhere near a flame. The petrol vapourises and passes upwards into a pipe, from thence through a cooler, where it condenses and drips back into the tank, thus completing the circuit. The apparatus is fitted with a series of taps and pipes at which one can test any portion of the two circuits, water and petrol. It also has a safety valve. The two apparatus are in adjoining rooms, so that the steam generator is in the same room as the maceration tank, and can be used to clean the tank as well as work the petrol oven.

In conclusion, I would mention the following points about the institute as a whole : The arrangement of the rooms and corridors is excellent, one can go from one to the other and find that each has its particular use, everything is in order, and the continuity is just as it should be. That is to say, facilities for studying various divisions of anatomical work which one naturally connects together in the mind will be found next to one another. The restriction of

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students to one floor means better work. The students are satisfied, they know exactly where they can go, and the staff can work without fear of intrusion or work being spoilt by unknown hands. Finally, the system of overhead rails, which with the help of the lift connects up all the important rooms, makes transport of material easy, thus enabling students to see specimens in the right place and at the right time.

Clinical Articles

Sunstroke Following Castration.

By RICHARD HUDSON.

Retford.

DURING a period of very hot weather in June, 1935, I was asked to operate on a three-year-old rig colt. I tried to put the owner off having the operation performed owing to the extra risk during the extreme heat, but the colt, being troublesome and the owner needing him for the approaching harvest, I consented. (I found out later that the owner intended to insure him, but this did not take place.)

The operation was performed on June 19th. Both testicles were retained, one in the inguinal canal and one abdominal. The latter was found easily, only two fingers entering through the abdominal wound. On June 22nd, the sutures were removed from the sutured wound, and the wounds swabbed out. The owner was advised to turn the colt out during the night and bring him in before the morning sun became too powerful, and I did not expect to see him again.

On July 1st (nine days later), I received an urgent message that the colt was down and could not rise, but they had got him on to his feet when I arrived, and into the shed where he was housed.

The owner informed me that he had progressed very well up to that morning, and being busy he had left him out until midday. Leading him in, he noticed nothing amiss until he neared the yard, when he began to stumble, and eventually fell. I found him sweating profusely and breathing heavily ; his pulse was fast, and his heart-beats heavy. He was only able to stand with difficulty. His fore legs were as powerless as his hind ones. Sweat was pouring off him. His wounds were clean and healthy and almost closed. No attempt was made to sling him, but a good bed was provided for him when he lay or fell down. A four-dram physic ball was administered, and one ounce of pot. nitrate in about one gallon of drinking water, and this was continued every four or five hours during the day. As he cooled down he was lightly rugged.

For several days he could not move without falling, but he could rise with assistance. Further treatment consisted of inj. strychnine, half to one grain daily, and later arsenic, gr. 5, twice daily in his mashes up to September 26th.

The herniated portion of duodenum is clearly seen above the 8th rib, the normal attachment of the diaphragm.

(*Article by* W. R. McKinna, M.R.C.V.S., D.V.S.M., *page* 371)

Fractured Pisiform.

(*Article by* W. T. Stobo, M.R.C.V.S., *page* 373)

Anterior view. Grooves well marked; note width at top and bottom, with "waist" in between.

Grooves marked with chalk.

(*Article by* J. McCunn, *page* 373)

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View of shoe showing ground surface and bend at toe.

Lateral view of shoe showing gradual rise to heel. Narrow webb and "bent" (not dumpted) toe.

(*Article by* J. McCunn, *page* 373)

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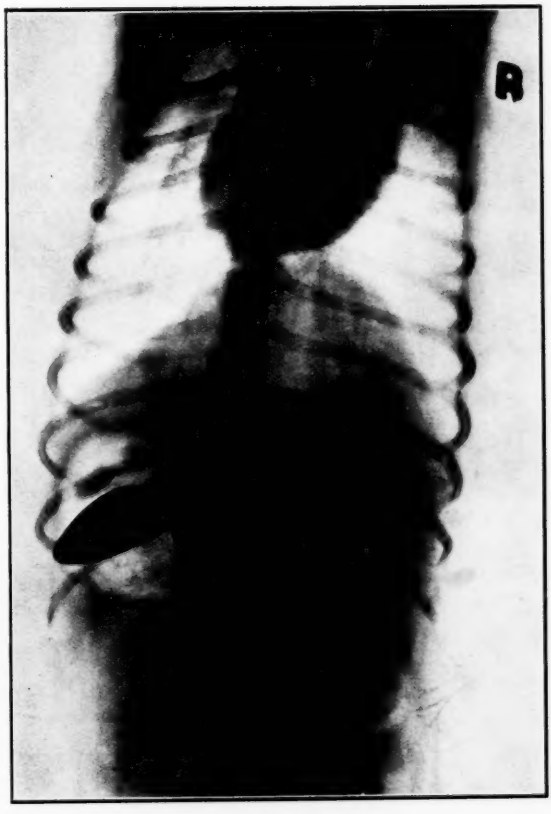

Dog swallowed spoon.

An interesting X-ray presented by Mr. O. Stinson, M.R.C.V.S.

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He has gradually recovered the use of his limbs and can do any kind of farm work, though he swings his hind quarters a little if turned quickly.

It is evident that insurance companies have a good reason for refusing such risks during very hot weather, and so should veterinary surgeons.

Mammitis, or Mastitis, in Bovines.

By G. MAYALL, M.R.C.V.S.

Bolton.

THIS has always been a bug-bear to the veterinarian. Have we made much progress against its control or eradication? If we have—and I think acute mammitis is less prevalent than it used to be—it is largely due to better constructed and more hygienic cow-houses; and quietly, yet considerably, the reconstruction and remodelling of byres has been going on for a quarter of a century. It is stated that mastitis seldom occurs from outside sources; but however it arises, the udders of cows can be better observed and faults seen better in a good than a bad light, and the incompletely milked-out vessel can be discerned more easily. The udder, too, in a properly-constructed cow-house will be less subject to direct draughts.

Besides, even if we assume that mastitis does not arise from dirty litter and unclean stall floors, he would be a simple practitioner who did not call attention to these matters when seeking to control and reduce cases of mammitis.

Cows coming in at the beginning of a lactation period are often found to be defective in one quarter. Mr. Hugh Begg, F.R.C.V.S., writing some time ago, stated that "the most probable explanation of the change is that the organisms were present in the defective quarters when the animals were milked for the last time and put to grass, and that they grew unhampered in the milk secreted thereafter, and altered its character. Then, through contact with the unhealthy secretion, the acini or lining of the milk ducts would be prejudiced in the first place and then directly attacked by the bacteria, causing a state of catarrh more or less destructive to the milk secreting cells."

Otto Stader, in an address at the Twelfth Annual Veterinary Conference at the University of Illinois, Urbana, said: "I believe that the occurrence of mastitis depends chiefly upon resistance or lack of resistance of the stresses and strains of lactation. Although we cannot cause the disease with any regularity injecting gargety milk into the teats or rubbing it into scarifications on the teats, or by contact, we can produce it with regularity by traumatism. Feeding infected milk will cause it in a considerable percentage of cases." Stader, having come to the conclusion that the incidence of mastitis is due to a lowered resistance, endeavours to increase the supply of leucocytes by the use of bacterins made from all the strains or organisms occurring in the normal udders in the herd. He uses this procedure as a preventive of mammitis. The bacterin is given to all animals in the herd at intervals of not longer than seven or eight months.

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Since the periodical inspection of dairy cows by veterinary surgeons has been instituted, the detection and isolation of cows affected with mammitis has become important. Cases of sore throat in human beings and diarrhœa in infants and children have been ascribed to the bacteria present in an udder affected with mammitis. It is not intended to enter into a consideration of the treatment of mammitis. For almost untold years these cases have been treated in many ways by various methods, in a large percentage of cases unsuccessfully. The real victor is a member of the prevention army. But what can we do with cows in a herd that are affected with chronic mammitis ?

(1) Isolate them if possible, and keep milk out of regular supply.

(2) Have them milked three or four times daily and destroy the milk, or at any rate boil it before giving to pigs, calves or poultry.

(3) Use the Dislac test on suspected cows, and give the farmer or dairyman some dislac cards, explaining their use to him, and telling him not to put the milk in the general supply until the test shows it to be normal. If after a fair period of time the milk does not become normal the cow should be regarded as a sinner, and be removed from the herd.

(4) All civilised countries are progressing in the production of a clean milk supply, and it behoves the veterinarian, in season and out of season, to do his part by action, speech and writing, in pointing out the way in which that precious vessel of the cow, *viz.*, the udder, may be kept healthy and productive.

Hæmophilia.

By W. R. McKINNA, M.R.C.V.S., D.V.S.M.
Huddersfield.

I HAVE not previously encountered cases of "bleeders" in animals, and can find no mention of it in literature that has been available. Such cases are known to exist in man, and that the peculiar failure of certain individuals' blood to clot normally is an hereditary trait. Apparently it occurs only in the males of a family, being handed down by the female.

I have had a series of three cases of canine hæmophilia in male Aberdeen terrier dogs of different litters, from one Aberdeen terrier bitch.

Case 1.—Aberdeen terrier dog, twelve months old, was admitted to hospital for removal of a small fibroma below the carpus. We were unable to account for excessive oozing of blood from the wound for many days, and healing was very slow. About nine months later this same dog was admitted for treatment with signs of general collapse and intense anæmia. There was no history of accident, and the condition had arisen suddenly. The following day a deep-seated swelling was observed in the right groin, and appeared to extend deeply into the abdomen. General treatment was of no avail for a few days, and the dog was destroyed when *in extremis*. Post-mortem examination showed no involvement of the

abdominal cavity, but a huge hæmatoma into which the animal had almost bled to death. It is almost certain that no extreme violence could have occurred to this dog, and that the subcutaneous bleeding must have arisen from a slight blow.

Case 2.—The removal of a small tumour was followed by a constant oozing and delayed bleeding. A few superficial injuries at a later date bled excessively, and as the dog was unsatisfactory in other respects, the owner wished for his destruction.

Case 3.—A deep cut on the head—normally a situation for rapid healing—bled persistently in spite of all treatment. Healing was consequently slow. Hæmostatic serum was beneficial temporarily, while calcium injections proved to be useless. Later, due to fighting, small wounds on the ear bled inordinately, and as the dog continued to fight on discharge from hospital, the owner's patience became exhausted, and the dog was destroyed. In this case the new styptic made from viper venom was used, with temporary beneficial results.

Case 4.—This may be cited, although was not seen by me. The dog belonged to the owner of Case 3, some twelve months before, and was from the same parentage. Its history was similar to those described, and was also finally destroyed.

It was these two latter cases that suggested a connection between the two former, and inquiry showed that these dogs were all bred by the same bitch. The dogs were young and in good health, but the smallest wound led to excessive and prolonged oozing, and in one case a slight external injury produced a huge subcutaneous hæmatoma that brought the dog to the point of death.

There are, I know, other male dogs from the same bitch in my own neighbourhood, but whether only a proportion of them are " bleeders," or the chances of fortune have not caused wounds, is not yet known.

Rupture of the Diaphragm in the Dog.

By W. R. McKINNA, M.R.C.V.S., D.V.S.M.
Huddersfield.

THE interest of this case is the survival of the dog for the long period of six months following the injury, and the help given by X-ray examination in determining the diagnosis.

The subject was a fox terrier dog, five years old, involved in a motor accident during last December. Apart from shock and some bodily discomfort for several days, the dog appeared to recover. Gradually, however, it was noticed that he became tired easily, had periods of restlessness, and about four months after the accident developed a spasmodic cough, with a laboured respiration after slight exertion. In spite of this, the appetite was maintained, and the dog remained in cheerful spirits.

When consulted in June last, six months after the accident, the patient showed

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a catchy laboured respiration on exertion and on deep abdominal palpation. Auscultation of the chest revealed nothing of a diagnostic nature, but the history of the case and character of the breathing suggested the probability of diaphragmatic injury. X-ray examination was carried out as an aid to diagnosis.

The photograph shows a loop of duodenum anterior to the diaphragmatic attachment on the right side. It was thought possible that the hernial opening might be small and repairable, and as the owner was desirous that all should be done that was possible, an explorative laparotomy was carried out to ascertain the extent of damage.

Adhesions around the right side of the diaphragm were broken down fairly easily, when it was found that the diaphragm on this side was almost non-existent. Small intestine and a large lobe of liver occupied most of the right side of the chest. Anæsthesia was allowed to proceed until death supervened. An interesting point is that there was no immediate respiratory failure on opening into the chest cavity, and that breathing was maintained for fifteen minutes under inhalation anæsthesia before this was accelerated beyond the safety margin. It suggests a possibility that a small diaphragmatic hernia might be repairable under ordinary conditions of anæsthesia.

I have previously recorded a similar case of diaphragmatic hernia in a dog living for three months after injury. Six months appears to be an unusual space of time in view of the extent of injury. The owner was emphatic that there had been no possibility of a second accident following that which took place in December.

Lambs Killed by Fox-Hound.

By N. S. BARRON, B.Sc., M.R.C.V.S.
University of Reading.

WHILST visiting a farm during March, my attention was drawn to a row of lambs which the farmer said he had found dead that morning. Three had been found in one field, two in another, and odd ones on different parts of the premises. There had been no previous signs of illness in the flock, and the owner was at a loss to explain the deaths. The lambs were from one to three weeks old, and in good condition. The examination revealed in all cases small neat punctures of the skin, from $\frac{1}{4}$ in. to $\frac{1}{2}$ in. diameter, either just over the posterior surface of the scapular or just in front of the point of the hip and from one to three in number. They were not always present on both sides, and whereas in two cases the wound was deep, in the remainder the skin alone was punctured.

On removing the skin the amount of extravasation of blood and the degree of tissue destruction was amazing. Ribs had been fractured wholesale, resulting in profuse hæmorrhage into the thorax, and the lumbar vertebræ were likewise damaged when this region was affected.

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Amongst the possible causes, attack by rooks or herons was discussed, as these birds are known to prey on young animals occasionally, but they usually peck out the eyes, and in this instance only one had been removed, so this theory was rapidly abandoned. The distribution of the fatalities rather complicated the picture. As there was a large mental hospital in the neighbourhood it was not unreasonable to consider the possibility of mal-practice, more especially in view of the regularity with which the seat of injury occurred over the shoulders and loins. However, with a certain amount of misgiving it was agreed that a dog or fox was probably responsible, and it was interesting to read in the press two days later that a fox-hound, which remained unclaimed, was shot in the neighbourhood, having caused further deaths in the meantime.

The nature and regularity of the injuries and the extensive internal destruction of tissues deserve particular comment and a possible parallel might be drawn between this and cases of injury in the smaller animals by motor car accident, where internal lesions are often unaccompanied by skin wounds.

A Fractured Pisiform.

By T. W. STOBO, M.R.C.V.S.
Weybridge.

THE patient was King's Counsellor, a racehorse which fell after jumping a fence at Sandown Park December meeting. Upon rising the animal walked back to the stable, not specially lame at the time, but upon being taken out of the stable on the following morning was intensely lame with considerable swelling and pain in the region of the accessory carpal bone. Vetoplasm was applied, and the swelling had become considerably reduced at the end of the next day, and the gait was practically sound. The fracture was definitely perceptible on palpation. An X-ray examination was made and, as the result, the horse was destroyed. Post-mortem examination confirmed the fracture.

A Note on the Diagnosis and Treatment of Navicular Disease.

By J. McCUNN.

IT is pleasing to note by the recent discussions on navicular disease that the horse is still an object of interest to veterinarians. Much stress has been laid on the value of the X-ray in diagnosis, but I venture to state that, useful as that aid is, a complete diagnosis relies to-day, as yesterday, mainly on the clinical interpretation of the case. In addition to the well-known clinical signs and symptoms, one significant feature has impressed me in the cases that have come to my notice.

This is the presence of a shallow groove which, starting near the heels, can be traced to the anterior part of the quarter. It gives a distinct "waisted" appearance to the hoof. The hoof is wider at the coronet and at the lower border

than it is in the middle. In many cases this groove can be seen, while in others it can be appreciated by the sense of touch. The last twelve cases I have seen have shown this feature quite distinctly, and the photographs reprinted herewith are of a typical case. This case was verified by X-ray. The subject was an eight-year-old hunter gelding who had been lame since last December.

It is doubtful if a cure for established disease will ever be found ; but all cases of navicular disease are by no means hopeless. By the use of hoof section and surgical shoeing many cases can be alleviated sufficiently to permit of useful and even strenuous work.

Hoof section is performed by the aid of a " Hitching's Hoof Saw." Usually three grooves are made in the heels and quarter region. The grooves are best when made in the line of the grain of the horn. The shoe is one which aims at putting the frog and toe out of action as much as possible, and transferring all weight to the wall. The toe clip is dispensed with and replaced by a " Bleninsop toe " (not dumpted toe). The branches of the shoe are made as narrow as possible, rising from the toe to heel to a wedge, which at the heel should be at least 1½ in. deep.

The principles of this shoe were evolved by observation on many cases of navicular disease seen in a large town practice. I noticed that the subjects of navicular disease were generally those animals with a wide, shallow and weak heel. It was interesting to watch the change of shape of the hoof in some of the cases in which there was, in time, some alleviation of symptoms. The slope of the wall became steeper, the sole more domed, the frog retracted and contracted, and a deep heel developed (*i.e.*, the old so-called typical foot).

It was noticed that there was also a tendency for the toe to be worn when the animals were shod flat. Nature attempted to make the wall the bearing surface.

At the time of writing this note I have just heard that the horse whose feet are illustrated, and in which navicular disease was definitely confirmed by X-rays, has been quite sound since the hoof section and surgical shoeing were performed. By the same post I head of another successful case.

While making no claims for originality, this line of treatment has given such a satisfactory percentage of alleviation of symptoms that I feel compelled to pass the information on in order that it may be tried in a wider field than it is nowadays my lot to encounter.

I am indebted to Messrs. A. B. Orr, M.R.C.V.S., and P. Southern, for the photographs.

Periostitis of the Fifth and Sixth Cervical Vertebræ.

By J. RICHARDSON, M.R.C.V.S.

Swindon, Wilts.

Case.—Black half-bred gelding, aged, about fifteen hands.

History.—Morning of April 6th, after several days chain harrowing, he stumbled and nearly fell while performing the same work.

Examination.—He could walk more or less normally in a straight line, but he was unable to turn without pivoting on his hind legs and swinging both fore

legs round. This became more marked as time went on. There was a small bursitis on the withers, but no swelling on the neck, and evidence of pain was only shown when turning the head. When seen on May 14th, the case was even more stiff about the neck, and it was suggested to the owner that the gelding might be T.B. tested. However, before this was done, on May 16th, he was found down and unable to rise, so he was shot.

Post-mortem.—The cervical vertebræ were boiled out, and the fifth and sixth were found to be affected with periostitis. These were sent to the Royal Veterinary College, and the opinion of those who examined them was that the disease was probably tubercular in origin.

Abstracts of Current Literature

Dairy Cattle—Breeding, Type and Management. By JAMES MACKINTOSH, National Institute for Research in Dairying, Reading. From "Dairy Farming and Dairy Work," *Journal of the Royal Agricultural Society of England*, Vol. 96.

Improved Breeding Methods.

THE increased attention given in recent years to methods of breeding for milk production has been maintained during 1934, and there are indications that the interest will be intensified during the next few years. In all countries during the last twenty-five years records of milk yield and fat percentage have been largely used by breeders of dairy stock in the selection of both cows and bulls, and this practice has undoubtedly contributed to the improvement which has been brought about in the average output of our herds. At least it can safely be said that the use of records has provided a means of accurate measurement of the output of individual cows and has supplied standards whereby we can judge whether the yields obtained are satisfactory or not.

A marked development of the science of genetics has also taken place during recent years, and we are now beginning to get a little accurate knowledge of the mode of inheritance of some of the good and bad characteristics of our cattle.

One of the problems which confront breeders is how to make the best use of the information which milk recording and the science of breeding have placed at their disposal, and numerous articles have been written to show what practices should be followed. Recently an American writer has published a book on "Breeding Profitable Dairy Cattle" which challenges some of our popular opinions and contains many helpful suggestions about breeding methods for the future.

The author (E. Parmalee Prentice) has studied dairy stock in many countries, and owns a dairy herd and farm at Mount Hope, Massachusetts, where much research has been carried out into breeding methods. He states that the purpose of his book is "to do for agriculture in the twentieth century, by the application

of the new knowledge of inheritance, as much as was done in the nineteenth century by the invention of agricultural machinery." He emphasises the high proportion of farm income which is derived from milk and milk products, and points out that the average annual yield of milk of American cows is low (4,500 lb.), and that by improved breeding methods the average can be raised to twice its present figure. The average yield of English cows is given as 462 gallons (Census of Agricultural Production, 1931), and no one will deny that any methods which would raise this by even 50 per cent. are well worthy of study and, if found to be commercially economical, also worthy of adoption.

In the first part of his book the author gives an interesting historical account of the growth of dairying in Europe and states that there have been four distinct periods in the development of dairy cattle. First, the time of open-field farming before 1745, when milk production was strictly limited by lack of winter food. Second, the age of Bakewell, the Colling Brothers and Bates, after 1745, when food became abundant, but before the general establishment of herd books. Third, the age of pedigree breeding, from the establishment of herd books to the founding of Cow-Testing Associations, *i.e.*, the introduction of milk recording. Fourth, the period now beginning, marked by the introduction of genetic methods of breeding and the use of proved good sires.

One of the most important points made is that those cows which are entered in herd books are not appreciably better, in respect of milk yield, than unregistered cows ; that the possession of a pedigree is no guarantee of superior merit ; and that the commercial farmer has therefore little inducement to purchase registered stock. The author summarises this position in words which merit the attention of all Dairy Breed Societies : " So long as the Breed Associations register on pedigree alone, taking good, bad and indifferent without production records, improvement in quality is impossible." Another challenging sentence is : " If any association puts ' salesmanship ' first, giving to scientific breeding a subsidiary place, it will fail to meet the demands of the dairy industry and ultimately will be superseded by another organisation."

On the question of the importance of type in judging and selection, it is stated that the description of many of the " points " which are considered desirable can be traced backwards through the books of early writers to the time when cattle were valued mainly for draught purposes, and that sufficient attention has not been paid to the change in type necessitated by a marked change in purpose for which the animals are kept. In this connection it is surprising to find little or no reference to the shape of the udder and to the improvements which have been brought about, especially in the Ayrshire breed, in regard to protection from injury and ease of milking. Also, on the question of type as a guide to the selection of a bull, the weakness of selection by pedigree alone, or by appearance alone, is rightly stressed, but no mention is made of the importance of the type of the dam in the choice of a young bull.

The constructive portion of this book, which deserves close attention, is that

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devoted to the progeny test as a measure of productive ability, and the means whereby the results of a progeny test can be most simply and helpfully stated. A number of methods whereby progeny records can be tabulated and interpreted are given and discussed, and finally the Mount Hope index is given in its two forms —the " Commercial " and the " precise." For practical purposes the commercial form is considered to be accurate enough, and it may be easily understood and simply stated. It is based on the belief that the progeny inherit equally from both parents ; hence, when the average yield or fat percentage for a group of dams and their daughters by the same bull is known, the index or transmitting value of the bull can be calculated ; for example—if the dam's average milk production is 8,000 lb. and the daughter's average production is 10,000 lb., then the bull has transmitted a productive ability of 12,000 lb. ; similarly, if the average fat content of the dam's milk is 4.5 per cent. and the daughter's average is 4 per cent., then the bull has transmitted a fat percentage of 3.5 per cent. There are numerous points to be attended to in arriving at a reliable average for a group of daughters and their dams, but the above simple statement shows the principle on which the productive index of a bull can be calculated.

The " precise " form of the Mount Hope index differs slightly from the " commercial " form in that the milk inheritance of the daughters is taken as " seven-tenths of the way toward the higher parent, while in fat percentage they are four-tenths of the way to the higher parent."

It will be readily agreed nowadays that the assessment of the breeding value of a dairy bull can best be made by a study of the production of his daughters, considered either alone or in conjunction with their dam's yields, but there will be more hesitation in attempting to state in definite figures the transmitting value of a bull, because other characteristics of the daughters, in addition to the yield and fat percentage of their milk, have to be taken into account in assessing their true merit. In course of time, however, the statement of bull indices will doubtless become usual, and they will certainly be most helpful in constructive breeding. In this connection Mr. Prentice's book is a most useful contribution, and there is also no doubt that his criticism of the present methods of herd-book registration on ancestry alone, and of the importance attached to certain points of type in the judging and selection of cows, and particularly of bulls, must receive the careful consideration of the Dairy Breed Societies in this country as well as in America.

An interesting illustration of the benefits to be derived from the use of progeny-test results in the selection of stock bulls is contained in a bulletin issued by the New York State Agricultural Experiment Station. An account is here given of the progress of the station's herd of Jerseys since its foundation in 1900, and it is shown by the average figures for the yearly production of butter-fat per cow, that there was no improvement from the date to 1921. During this period the herd was replenished by home-bred stock, and bulls or bull calves were chosen as they were required from good herds, out of good cows with satisfactory pedigrees,

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and were sold or slaughtered at four to five years of age; in fact the breeding methods followed were considered to be the best calculated to improve production. Under these conditions the average yearly output of butter-fat per cow was of the order of 350 lb. There were occasional years when production reached a higher average level, but this was because some of the older cows were milked for longer lactation periods, and not because of any improvement in the cows themselves.

From 1921 onwards the bulls in use were retained until their daughters came into milk; one was proved to be really good, and the other was proved to be only moderate; the former was retained for another year, and the latter was slaughtered. The next two bulls used in the herd were bought, as calves, after a careful study of the progeny records of their sires and grandparents. Both have proved to be very good, and the average annual butter-fat yield per cow has been raised to well over 400 lb., rising to some 460 lb. in 1931 and 1932. Apart from the greater care in the choice of bull calves for future stock bulls, the practice has been to retain those which have proved good until they were ten to eleven years of age, while more stringent selection has been applied to the cows in the herd. It is claimed that the results clearly indicate that in the choice of bull calves intended for herd sires more attention should be paid to the progeny of their ancestors. The calf should be the son of a proved good sire, the majority of whose daughters should show production records substantially higher than the average of the herd in which the young bull is to be used.

Progeny Recording in England.

The possibility of making improvements of similar nature and degree in English herds is by no means remote, provided that the owner will give to the choice of bulls the time and care which the subject warrants. The English milk-recording system, while still capable of improvement, gives the yields of all the cows in herds which adopt the scheme; hence the material already exists, in the annual registers, whereby the true value of the bulls formerly used in a herd can be judged. The next stage is to group together the yields of the daughters of any one bull in such a manner that the true meaning of the records can be determined and a comparison made, if desired, with the records of the respective dams. At the instigation of the Central Council of Milk Recording Societies, the Ministry of Agriculture inaugurated, in October, 1934, a Progeny Recording Scheme whereby the progeny records of any bull used in a recorded herd can be collected for study if the owner so desires. Most, if not all, milk recording societies have adopted the scheme, and it is to be hoped that a large number of members of these societies will make use of the facilities now available to enable them to understand more fully the results of the breeding methods they have followed in the past, and to plan more efficiently for the future.

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Reviews

Milk Production and Control. By Wm. Clunie Harvey and H. Hill. Pp. 555. Figs. 180. London: H. K. Lewis & Co. 1936. Price 21*s*.

In the Preface to this book it is stated that it has been written "with a view to presenting the position as it now stands." Unfortunately, changes in the position occur so rapidly that the book is in some respects already out of date. For the increasing numbers of veterinarians who find themselves compelled to keep abreast of all the numerous developments of modern milk production there is a lack of an authoritative text-book: a reliable and trustworthy monograph on milk would be a boon indeed. On glancing through the list of contents of the book one forms a preliminary impression that perhaps it may fulfil this lack and may serve as a really reliable reference book. Unfortunately, on closer acquaintance, the book does not quite fulfil expectations. The portions devoted to milk production (Chapters III–V) are perhaps the most disappointing. The section dealing with breeds of cattle contains some extraordinary statements. It is surprising to read that in this country there are "certain pure breeds kept for milking purposes," and to find among others in the list given, Welsh Blacks and Herefords. The statements that the Lincoln Red is the second highest yielding breed and that the Ayrshire gives less than the South Devon are also amazing; while it must be very satisfying to the mathematically-minded man to learn that the Dairy Shorthorn has a milk yield of 50 lb. per day and weighs 1,365 lb., that the Jersey gives 39 lb. of milk daily, and that the Red Poll weighs 1,225 lb. These are precise statements; some of the other breeds are allowed to have rather more variable yields and weights. In the portion dealing with the purchase of dairy cows there are many evidences that the writer had to depend for his facts upon second-hand information. A great deal of what is written is qualified by "is said to be," and where conflicting statements occur the amateur will be puzzled to know what he should believe. In a book dealing with milk production it would be legitimate to expect a considered discussion of the physiology of milk secretion embodying the results of modern research, but this subject, so vital to the whole matter, is dismissed in less than half a page. The feeding of cows is similarly dismissed with only the briefest outline, and it is to be hoped that no one who has to feed cows will attempt to do so on the lines advised. To vindicate this statement a quotation may be given: "The supply of milk from cows on grass is poorest during the summer months and richest from August to February." It is to be hoped that there is some explanation for such a gross mistake. Where other aspects of the practical side of milk production are discussed there are innumerable signs that the authors had little or no first-hand knowledge of their subject. Generalisations, often the vaguest, sweeping platitudes and a certain number of inaccuracies detract from the sound suggestions which are incorporated. There are seldom sufficient reasons given for this or that piece of advice, and anyone who perhaps holds erroneous views opposed to those given, will find little display of logical reasoning to shatter his beliefs or convince him of his errors!

The section in which a number of diseases of cattle are described might almost have been omitted. To the veterinarian some of the statements made are exceedingly crude and out of date. To read that the British dairyman should keep himself on the alert to avoid supplying milk from a rabid cow since it may reproduce the disease, that toxins form in the udder in milk fever (which cause death when injected into other animals), and that inflation of the udder is the common mode of treatment of this

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disease, are perhaps sufficient to enable one to judge the value of the portions dealing with diseases of cows. There are fewer criticisms to be made in the chapter dealing with construction of cowsheds, probably chiefly because considerable use appears to have been made of authoritative sources of information. However, a number of points on which the authors are dogmatic are definitely open to question. Cork asphalt is strongly recommended as a flooring. The authors have disregarded the absorbent properties of the cork chippings incorporated in the asphalt, and have not mentioned the poor wearing qualities of the asphalt. Rounded corners are recommended in the text, but in most of the sectional diagrams they have been omitted. Inside window sills are not in accordance with modern ideas of eliminating all possible dust-collecting surfaces. Galvanised tubular steel yokes are strongly recommended. There is a growing body of evidence against the tubular yoke and in favour of the more satisfactory centre-tie chain, which possesses all the advantages without the disadvantages, but the centre-tie chain is not mentioned. It is perhaps not desirable, however, to stress the deficiencies in this chapter, since it contains very much useful information, and is well written. From this part onwards the book definitely improves, and though parts of it are marred by lack of essential details, the later chapters are useful and informative. Probably in no other recent book which has been written by British authors about British conditions is there such a comprehensive account of the distribution and control of milk. Its course is traced from the farm to the consumer, and suggestions are made for greater efficiency and better methods of handling. Existing methods of dealing with milk are well described, and utensils, apparatus and processing plants are surveyed, though not always very critically. The authors do, however, point out most of the faults of each system and justly describe alternatives. Many of the large power-driven processing machines—suitable only for the use of big combine creameries and distributing firms—are illustrated and briefly described, and the book serves a very useful purpose in describing both the most lavish and the more simple types of equipment. It is perhaps somewhat unfortunate that very shortly after the book was published, the Milk (Special Designations) Order of 1936 appeared. This makes much of what is contained in the chapter on designated milks out of date. Similarly the emphasis placed upon bacterial counts throughout the book loses much of its point in view of the survey of the bacteriological control of milk carried out by Wilson and his colleagues.

There is a brief summary of laboratory control of milk in which most of the standard tests are described ; there is a useful chapter in which the various legislative measures which deal with milk are given in some detail ; and the book ends with a chapter on the future of the milk industry which may (by some) be considered somewhat thin and non-constructive. At the same time it must be clearly realised that the problem of the country's milk supply is by no means a simple one. The peculiar position of producers is hardly considered, and beyond one or two rather vague generalisations, the vital question of costs of producing milk in different parts of the country is not considered. It appears, however, to be fashionable for officials of one class or another to solve the producer's problems in an airy and superior manner. It is notably easy to tell a producer what he ought or ought not to do, but it requires a very considerable knowledge of the complex structure of modern agriculture in the various differing parts of Britain to be able to give really good advice to the rural farmer-producer of milk who has to fit his cows and dairy into the general scheme of his farm. The book will definitely fill a gap in the literature. It will be useful as a work of reference for the veterinary student ; it will doubtless be useful to the veterinary inspector, who must concern himself with the operation of milk legislation (though there will be many who will find themselves in violent disagreement with some of the views expressed) ; it will without doubt be widely used by the medical officer and sanitary inspector,

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and will probably be popular with such. To others concerned in the milk industry, it may fulfil the functions of a useful compendium, and may serve to enable the members of each particular section of the gigantic milk industry to understand something of the problems and difficulties, as well as to become acquainted with the techniques and processes of the others. The authors set themselves a task which could hardly be successfully performed without much specialist help ; they are to be congratulated in spite of the deficiencies noted. The publishers have maintained their high reputation : print is clear and easily read, the illustrations are well executed, and the book is attractively and strongly bound.

Bernhard Bang—Selected Works. Edited by VOLD ANDERSON, *Professor at the Royal Veterinary and Agricultural College, Copenhagen.* London: Humphrey Milford (Oxford University Press). 1936. Price 30*s.*

THE first chapter of this book describes the life of Bernhard Bang, and well illustrates that the world-wide renoun of this great research worker and teacher was the result of a life-long devotion to veterinary science. The editor has made a selection from Professor Bang's very extensive literary productions, and divided them into three groups. The first group comprises papers recording Bang's investigations on actinomycosis, mastitis in cattle, infections caused by the *Bacillus necrosis*, endocarditis in swine, erysipelas, epizootic abortion, Jöhne's disease and abortion due to tuberculosis. The second group consists of three papers which embody the results of Bang's work on tuberculosis of the udder and tuberculous milk. The third and final group comprises a selection of Bang's work on tuberculin and the method of applying it as developed by himself for the eradication of tuberculosis in cattle. There are in all twenty-six papers, ten of which are written in English, thirteen in German, and three in French. Some of the papers have previously only been published in Danish. The original orthography has been retained, and the researches of the author are described step by step in each disease dealt with, towards the elucidation of important economical problems. In addition to a portrait of Professor Bang the book contains several illustrations which are reproductions from original photographs. It should be interesting to all members of the veterinary profession, and particularly to those concerned with the eradication of tuberculosis. The book is worthy of a better binding than the paper one provided by the publishers.

News

R.A.V.C. OLD COMRADES ASSOCIATION.

THE sixteenth annual re-union dinner was held at Anderton's Hotel, Fleet Street, E.C.4, on Friday, October 2nd, at 7.30 p.m., the attendance numbering 164, being a record for the past ten years. After the Loyal Toast, the Chairman, Major-General W. S. Anthony, C.B., C.M.G., Colonel Commandant of the R.A.V.C., in proposing the toast of " The Association," said : " We meet to-night for the sixteenth consecutive time for our annual dinner, and there is evidently no diminution in that zealous attachment to the Association which has always been such a happy feature of these gatherings. Capt Warburton tells me that the attendance to-night is a record one. Since we met here a year ago there has passed from us a King beloved by his people, and respected by the whole world. Our grief at his passing is tempered by the knowledge that he has been succeeded by a Soverign who will worthily uphold all the noble

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traditions of his royal office, and use the examples of service bequeathed to him to benefit and inspire his peoples. A wide and intimate acquaintance with the daily life and activities of his subjects, a resolute endeavour to help them, and an understanding that makes that endeavour effective, give him a solid foundation on which he and we may build the strongest hopes that the Nation and the Empire have again found a leader who will fare with us along that highroad of service, duty and sacrifice which has been trodden by our race for so many generations. A new reign is associated with the quickening of men's minds, with expansion in discovery and enterprise, and those of us who remember the reigns of Victoria, Edward VII and George V can in retrospect discern this. It is certain that this will be the case in the matter of travel and transport in the present reign. This will result in much closer contact of the various parts of the Empire, and the contact will be one of man rather than one of commerce. We are insistently bidden these days to be air-conscious and traffic-conscious, to ponder over those problems of to-day which intrude on and affect our private lives. It behoves Old Comrades to be, in addition, Empire-conscious, to give a thought to the well-being and unity of the British Empire—that string of precious pearls flung across an envious world—and amid the distractions and violences of warring political creeds, to hold fast to the principles, to emulate the spirit, of those generations which founded our greatness. No Old Comrade needs to be exhorted to do this. He knows that great deeds lie behind the Empire, and that to the making of them went great qualities of mind and heart, and we can support the beginning of the reign in no better way, we can bring no comelier gift to crowning of the King, than remember these things and make them a message of trust and hope and effort which shall inspire our King and his peoples in the task that await them. With these words and in this hope and feeling I now ask you to honour the toast of ' Success to the Old Comrades Association.' " (Loud applause.)

Major-General J. J. B. Tapley, C.B., D.S.O., Director-General, Army Veterinary Services, in reply, said: "General Anthony and Members of the Old Comrades Association R.A.V.C., you and I are fully in agreement that more than one speech on a night like this is unnecessary. We are very fortunate that once more General Anthony has come all the way from Newbury to meet us and speak to us, and I am sure his words will go home. I met recently another member who often has addressed you on these occasions: I refer to Sir Layton Blenkinsop. He asked me to say how much he regretted he was not able to be present to-night—due to doctor's orders—and I am quite sure that we all hope that it is only to-night that he will be kept away, and that next year he will be with us again. General Anthony talked of the British Empire and the great deeds done to build it up. Our Corps did grand work in the Great War. I say that to-night because we all know that mechanisation is doing us no good. Our sphere in life is going to be contracted. We should, therefore, try to get some consolation in remembering what our Corps has done. The Association, as General Anthony has said, has flourished. Some perhaps think it only exists in order that we shall meet to have a good dinner, to meet old friends and renew old associations. You have a right to know that the Secretary and Committee of Management do other things—they find employment and relieve distress among some of the less fortunate of us, and we can be fully confident that this good work of the Association will continue."

CHRISTMAS SEALS FOR TUBERCULOSIS.

THOSE who are interested in the art of treating diseases of animals come into too close contact with tuberculosis to need telling of its ravages amongst human beings. Every day more than a hundred people die from this disease in this country alone. Veterinary surgeons will therefore sympathise keenly with the special effort

which is being made under the auspices of the National Association for the Prevention of Tuberculosis at Christmas time to fight tuberculosis through the voluntary bodies known as Care Committees. Treatment is provided by the State free of charge, but it is the Committees whose self-imposed task it is to look after the families of the tuberculous in order to prevent them from contracting this disease. In order to provide funds for bringing timely assistance—additional clothing, food, surgical appliances—to all who are unable to protect themselves, the National Association has organised a sale of Christmas Seals, which are cheery little greeting stamps used for sticking on the flaps of Christmas letters and on parcels. They cost ½*d.* each, 6*d.* a dozen, or 4*s.* a hundred, and are on sale locally by Tuberculosis Care Committees in many parts of the country. Otherwise they may be obtained by writing direct to the Secretary, Christmas Seal Sale, Tavistock House, Tavistock Square, London, W.C.1.

Preparations and Appliances

WE have had submitted to us samples of Elastoplast, Semiplast, Elastocrepe, and Cellona. These products are too well known to call for a detailed description. Suffice to say that their elastic and adhesive properties deserve special attention of all practising veterinarians. As an ideal support, firm yet softly resilient, Elastoplast bandages are incomparable. Half-spread Semiplast Bandages are particularly useful in the larger animals where direct adhesion to the affected limb is not desired, although adequate support is necessary. Elastoplast dressings of all sizes combine the above protective and elastic qualities, together with the incorporation of a suitable antiseptic pad, thus forming a perfect first-aid for the healing of all operative or accidental wounds. Further, their attractive appearance adds greatly to the prestige of the practitioner using them. Elastocrepe bandages are non-adhesive, but give unusually firm support in the treatment of injured tendons, ligaments or joints without interfering with the local blood circulation. The natural elasticity of the yarns employed is enhanced after washing, so that these bandages may be used repeatedly before being discarded. These products are marketed by Messrs. T. J. Smith & Nephew, Ltd., of Hull.

RUBBER BOOTS AS AN AID TO THE TREATMENT OF FOOT ROT.

ADVISORY leaflet No. 95, issued by the Ministry of Agriculture and Fisheries, gives somewhat in detail the symptoms and treatment (preventive and curative) of foot rot in sheep; but the chief delay in the effectiveness of the measures used is caused by the difficulty of keeping the dressing in contact with the diseased feet for a sufficient length of time to effect a permanent cure.

In the past sheep have been returned to the pasture, following their treatment with ointment or other remedy, without any covering, and the natural result is that it is rubbed off in the grass, and the effect is so limited as to be comparatively negligible. The boot keeps these dressings in place, and results of tests show that most cases of foot rot can be completely cured in a week when the boots are used; only one or two dressings being necessary to effect a cure. The boots are made in the Dunlop footwear factory at Walton, Liverpool, which turns out millions of pairs of Wellingtons a year, and are built to fit the sheep's feet closely. They have an inward curve at the top of the horn structure to reduce the splashing of dressings on the leg; an outward curve to give the fetlock joint free play and stop chafing; a bag at the back to give the "knuckles" freedom; stout soles, which give to the tread; and narrow tops, which grip the legs. The boot is slit part of the way down the front and the foot is slipped into it behind a flap which is then drawn back into position, being fastened with a

press fasten and a lace-hole, or with a zipp. The boots are made in five sizes, three of which cover 80 per cent. of the sheep in the country. They weigh an average of two and a-half ounces. A test applied under veterinary supervision for several months has demonstrated that sheep wear the boots without noticing them, and placidly go about living their normal life.

In a demonstration which was recently given before a number of agriculturists and sheep breeders at the Wye Agricultural College, Kent, and at which a number of veterinary surgeons were present, some of the sheep were fitted with the boots to show how easily they are worn, and that they do not interfere with normal movements. In several pens there were a number of sheep certified by veterinary surgeons as affected by foot rot in various stages of the disease. These were treated, and the application of the boot was demonstrated. Great interest was taken in the proceedings, which, if followed up, appear likely to prove a boon equally on grounds of economy to the sheep breeder as on those of humanity to the animals themselves.

Obituary

DEATH OF DR. WM. T. KENDALL, D.V.Sc. Melb., M.R.C.V.S.

THE profession in Great Britain will learn with regret of the death of Dr. Wm. T. Kendall, D.V.Sc. Melb., M.R.C.V.S., a man who made veterinary history, the founder of veterinary science in Australia. Dr. Kendall, who was eighty-five on February 10th, was born at Sunnybank, Torver, Cumberland, England, and was one of the first four qualified veterinary surgeons to practise in Australia. A Member of the Royal College of Veterinary Surgeons, he also held the degree of Doctor of Veterinary Science, Melbourne University. The Kendall Oration, given at Canberra every three years, was founded in his honour. Dr. Kendall acted for fifty years as honorary veterinary surgeon to the Royal Agricultural Society and the Royal Zoological Society. Almost his entire family took up veterinary work. His sons are the chairman of the Milk Board (Colonel E. A. Kendall, C.M.G.), a Bachelor of Veterinary Science; Colonel W. A. Kendall, the Prahran veterinary surgeon; Mr. John Kendall, who practises in veterinary surgery at Seymour; Mr. E. P. Kendall, a civil engineer attached to the State Rivers and Water Supply Commission; and Mr. H. Kendall, assistant director of the Zoo, who is carrying on his father's original practice, established fifty-five years ago in Brunswick Street, Fitzroy. His daughter is Sister E. J. Kendall, matron at the Presbyterian Ladies' College, East Melbourne, who went through the war years at Heliopolis Hospital. Dr. Kendall, who is survived by his widow, was buried in Melbourne General Cemetery.

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